



Speaker: Isaac Goldbring
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Thursday, January 19, 2012
4:15 PM
117 Hayes-Healy Hall

Title: Nonstandard methods in Lie theory

Abstract:

In this talk, I will survey several applications of nonstandard methods in Lie theory. I will first describe the nonstandard solution to Hilbert's fifth problem due to Hirschfeld and my extension of this approach to the setting of local groups, including a couple of recent applications of this latter result. I will then discuss Pestov's construction of nonstandard hulls of Banach-Lie groups with an application to enlargeability of Banach-Lie algebras. Finally, I will present two generalizations of Pestov's construction: a nonstandard hull construction for locally exponential Lie groups and algebras and a nonstandard hull construction for locally uniform groups. The latter construction is work in progress and involves an interesting interplay between the theory of infinite-dimensional groups and the theory of local groups.